

United States Army *Logistics Transformation Agency*



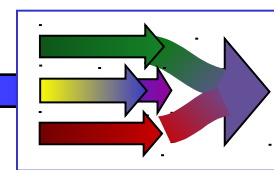
Common Logistics Operating
Environment (CLOE)

GOSC Pre-Brief

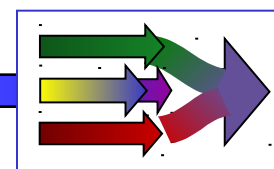
DCS, G-4

11 Sep 2003

**Materiel Logistics
Division
Logistics Transformation
Agency
(717) 770-7600**

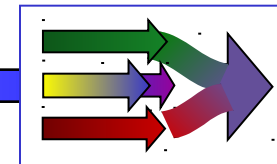


Background



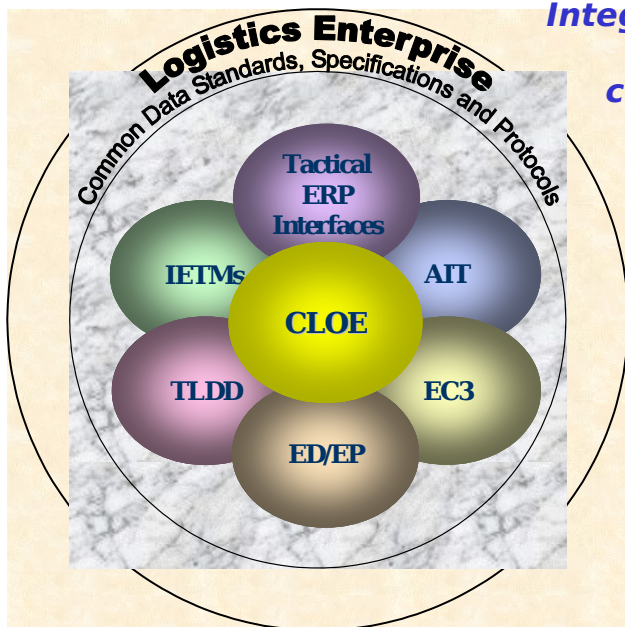
What is CLOE?

- **Process For *Synchronizing And Integrating* Doctrine And Technology**
 - **Equipment Health Management**
 - **Condition-based Maintenance**
- **Army-Approved Approach For *Interoperability of Enablers* in Logistics Transformation**
- **The Evolving *Operational Architecture* that Enables Sustainment Interoperability On The Battlefield**
- **A Program, A Process And An Operational Architecture: Enables Sustainment Of Mixed Force Generations On The Battlefield**

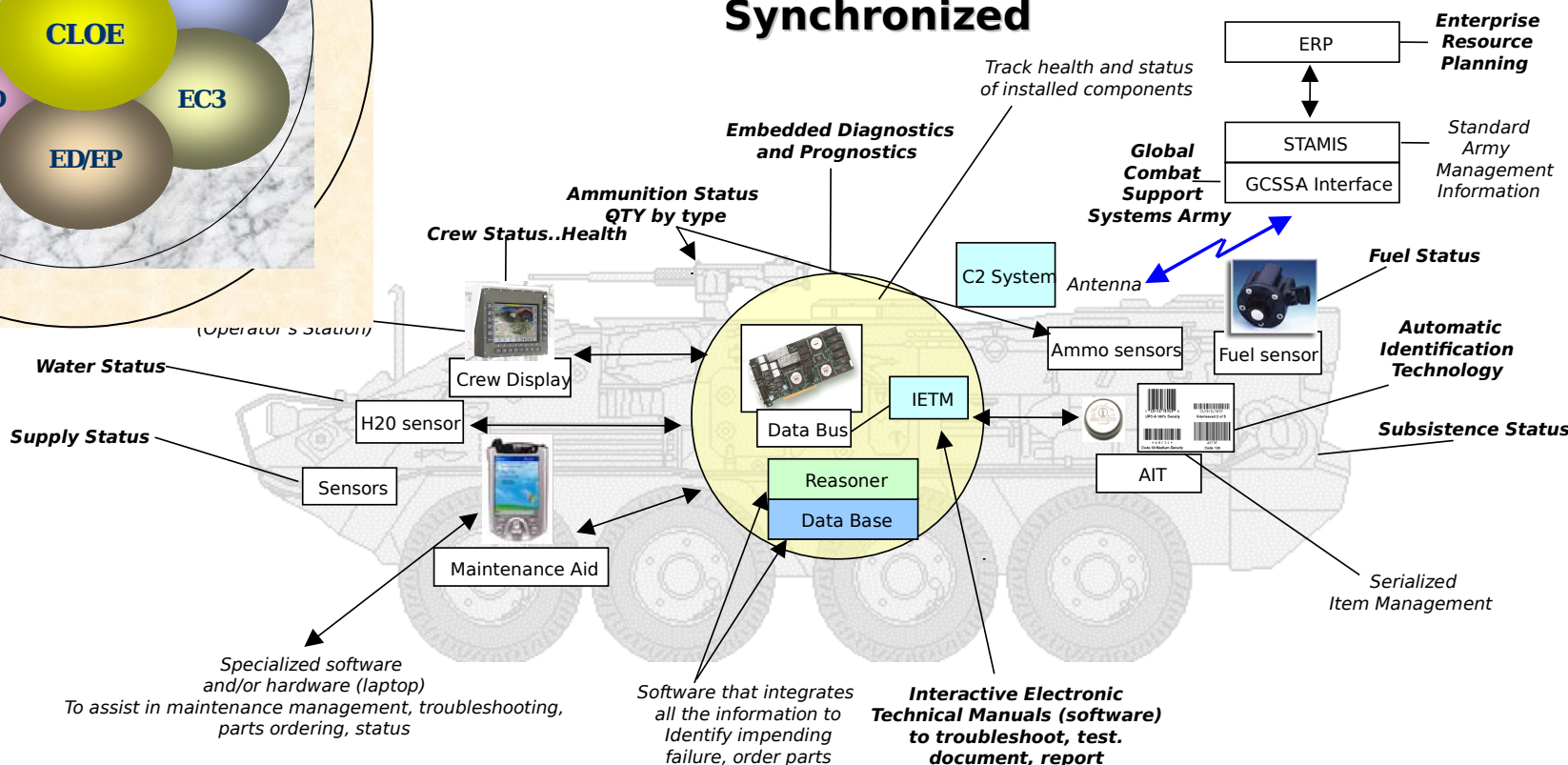


CLOE is...

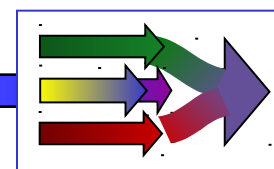
*Integrated Weapon System Status and Health Management
in a networked environment using
common data standards, specifications and protocols*



Sensor-Based Self Monitoring Self Reporting
Automatically feeds Army Shared Data Environment
Synchronized

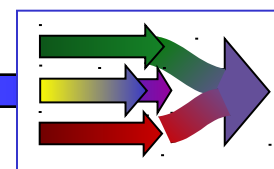


Sustaining The Transforming Army



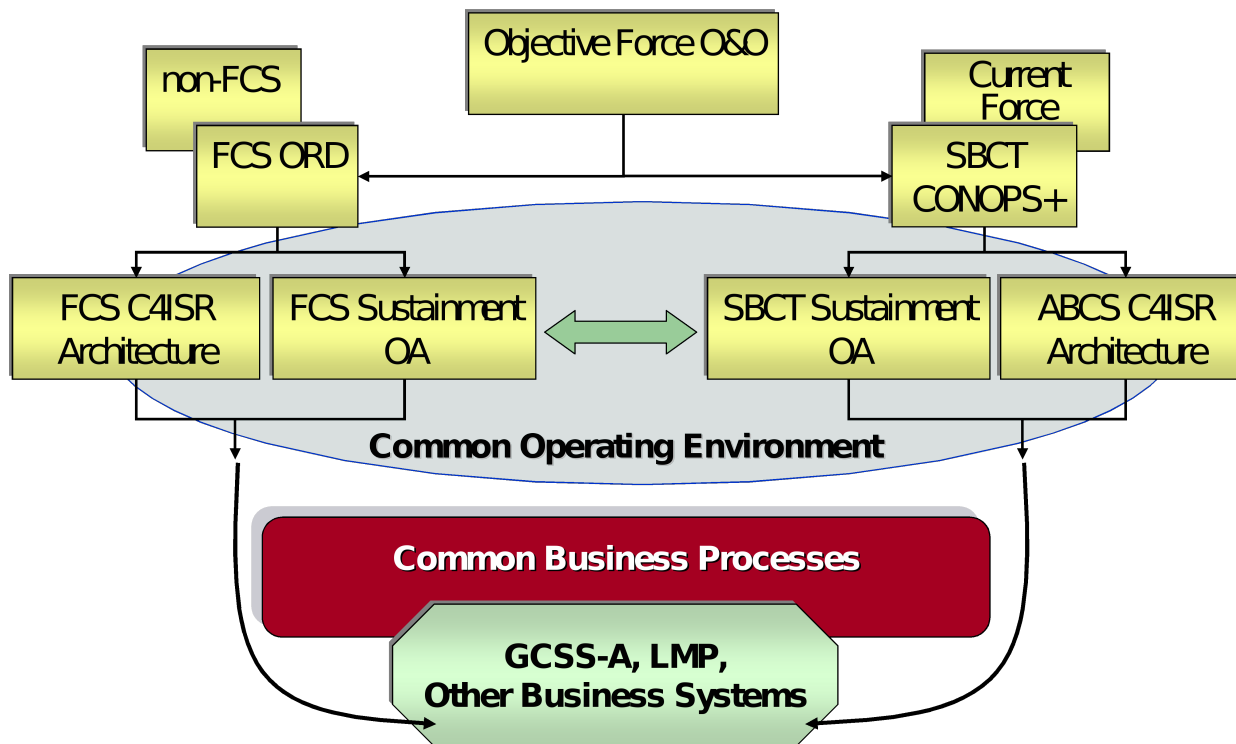
CLOE Early Successes

- **Near-term:**
 - **Establish The CLOE Program and the Army-wide Coordinating Processes (2003)**
 - **Finalize The CLOE Operational Architecture (V1.0) For the SBCT POE Technical Test (2003-2004)**
 - **Establish The CLOE SIL**
 - **Conduct The SBCT POE Technical Test**
 - **Scale-up The Operational Architecture (2003-2006)**
 - V2.0: Ground + Aviation + GCSS-A
 - V3.0: V2.0 + Soldier Systems
 - **Conduct the CLOE Experiment (2006-2007)**



Follow-On CLOE

- **Long-Term:**
 - **FCS / Non-FCS Sustainment Interoperability**
 - **Objective Force Sustainment Interoperability**
 - **Continuous Improvement**



United States Army Logistics Transformation Agency

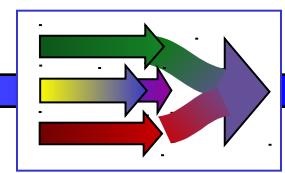


Common Logistics Operating
Environment (CLOE)

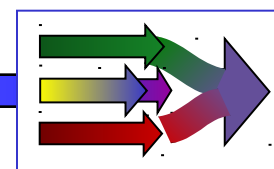
GOSC

29 Sep 2003

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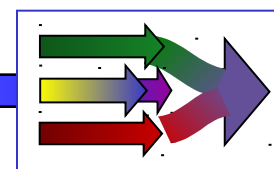
CLOE GOSC Pre-Brief



CLOE Policy Memorandum

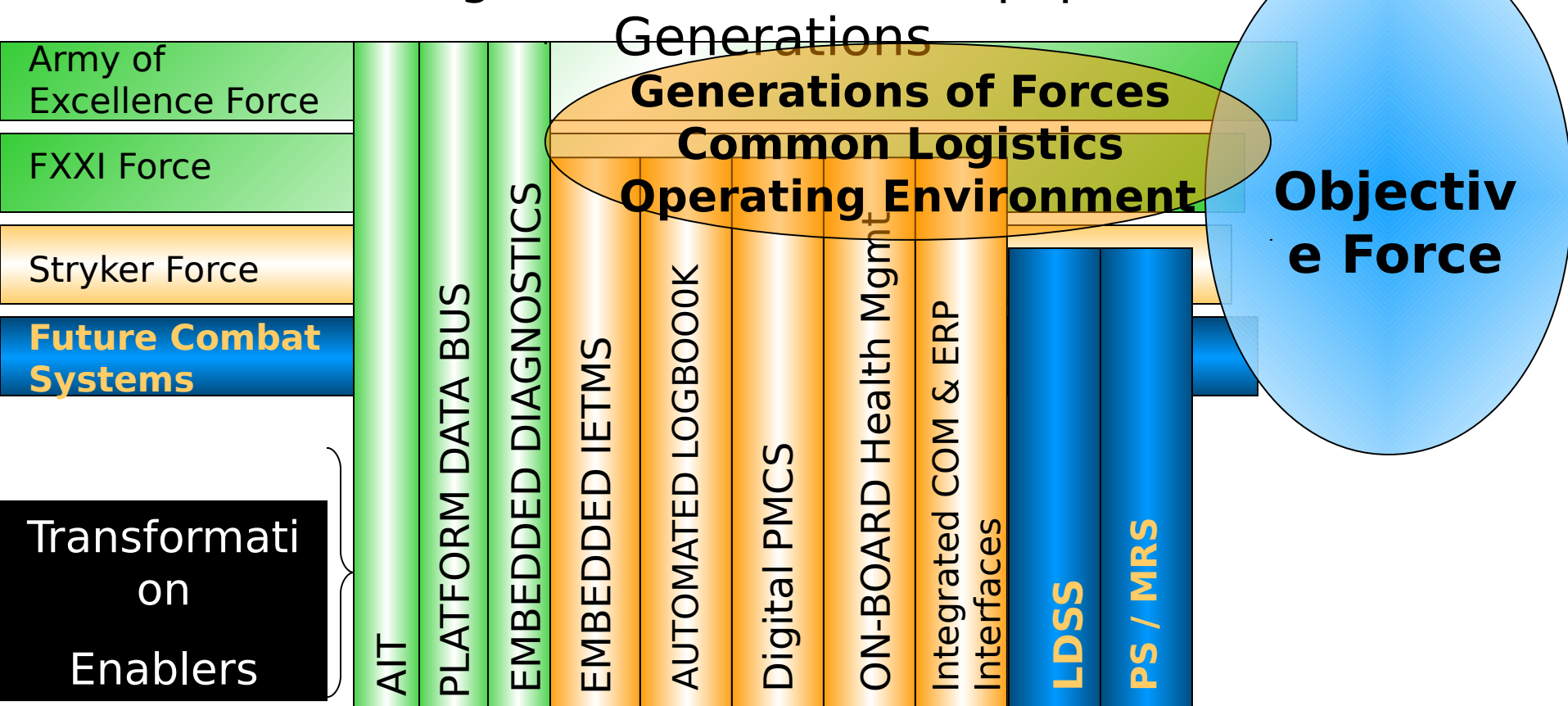
- CLOE Capabilities and Standards Policy Memo signed 25 Jul 03 by Assistant Secretary of the Army (ALT) - *"The Army will employ a CLOE to capture, store, retrieve, and utilize logistics data from battlefield operating systems"*
- Policy states:
 - G-4, as the Responsible Official for Sustainment to *lead, coordinate, and implement* the CLOE
 - TRADOC must consider CLOE *common data standards, specifications, and protocols* for sensor-based, self-monitoring, self-reporting platforms and equipment when writing and updating operational capability documents for OF units.
 - Program Executives and Managers use CLOE-designated *common data standards, specifications and protocols* when acquiring critical information technologies
 - Program Executives and Managers *acquire access to platform/equipment technical data* for all ACAT I, II, and III systems
 - Program Managers and Managers and AMC MSCs will *make technical data available* to acquisition and sustainment communities using commercial Program Data Management (PDM) systems

LTA has been assigned as the Executive Agent for CLOE

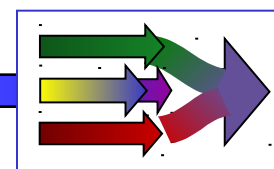


LOGISTICS TRANSFORMATION

Doctrine and Technology Must Be Interoperable for Platform & Soldier Health Management across All Equipment Generations



Sustaining The Transforming Army



CLOE Program Execution

CLOE Provides the Synergy for Logistics Transformation

1. CLOE Strategy Paper

- Developed by LTA & G-4

2. CLOE Campaign Plan

- High-Level Overview
- Reviewed Annually
- Signed by G-4
- CLOE CONOPS

3. Army Asst Sec. of Acquisition Policy Memo

4. Management Plan

- Detailed Plan
- GOSC Structure
- Establish CCB Process
- Establish CLOE SIL

5. Implementation Plan

- Detailed Plan
- Continuously updated
- Signed by G-4 & G8

6. Architecture Plans

- Working Documents
- Updated During Each Phase of Transformation Development
- Addresses OF Increment #1



JIM C4ISR
Unit of Action

Unit of Employment
Commonality of Systems

Performance Based Logistics

Embedded Diagnostics & Prognostics

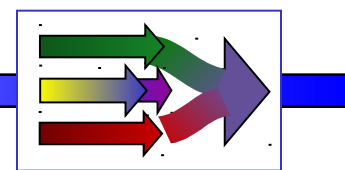
The right information, at the right time and right place

- Program Management Structure
- Addresses Standards & Commonality
- Establishes Configuration Management
- Current Force Retirement plans

- Guidance for PEOs/PMs
- Relationship to GCSS-A/LMP
- Migration of Current Force
- Follows EI Template
- Embedded Diagnostic Baseline
- Logistics Template for Current & Stryker Forces, FCS & UA
- Migration to OF

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CLOE Governance



AMC

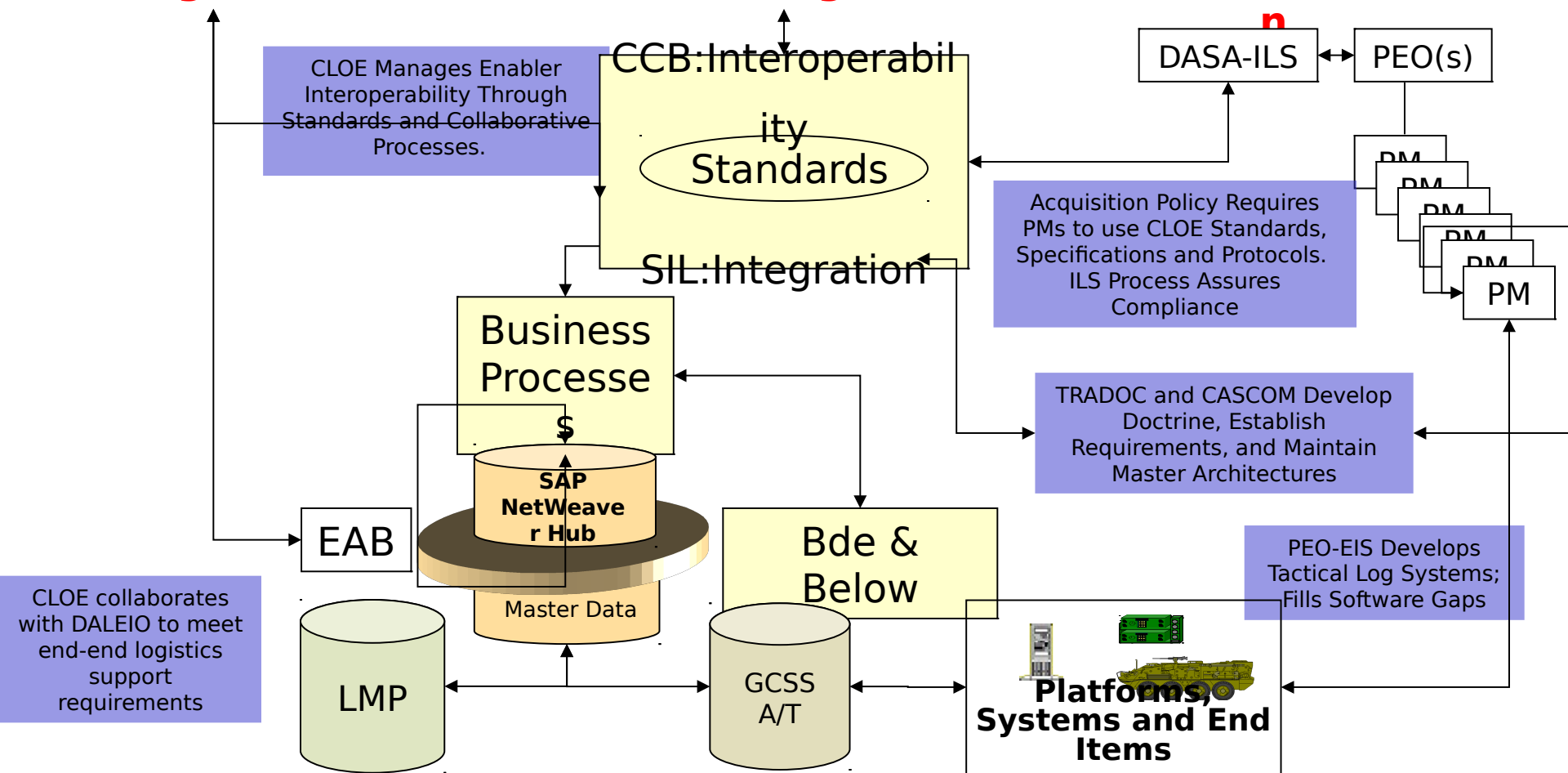
ARMY LEAD
G4/LTA

ASA(ALT)

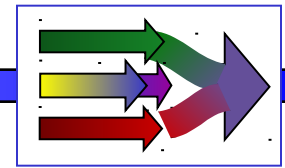
Enterprise Integration

Policy Oversight

Policy Implementation



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CLOE and the Logistics Enterprise Integration

Supports current Legacy and ERP

Long term - exists to work requirements and configuration management

CG AMC

ESC

Process Executives

PEO EIS

DALEI

Advisory Board

SASG

Synchronization & Integration

Architecture

Business Area Leads LAISO/CASCOM

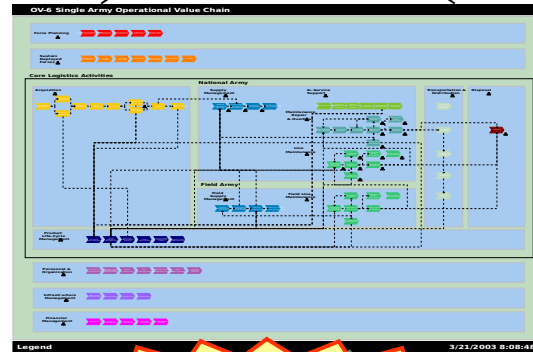
Implementation Project Team GCSS Army

PLM+

LMP

Business Team Leads (Functional)

Implementation/Best Business Practice Consultants



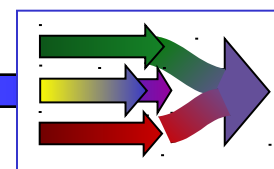
- Requirements Oversight
- Data Management
- Integration Opportunity Prioritization
- Policy Change Assessment

Subject Matter Experts

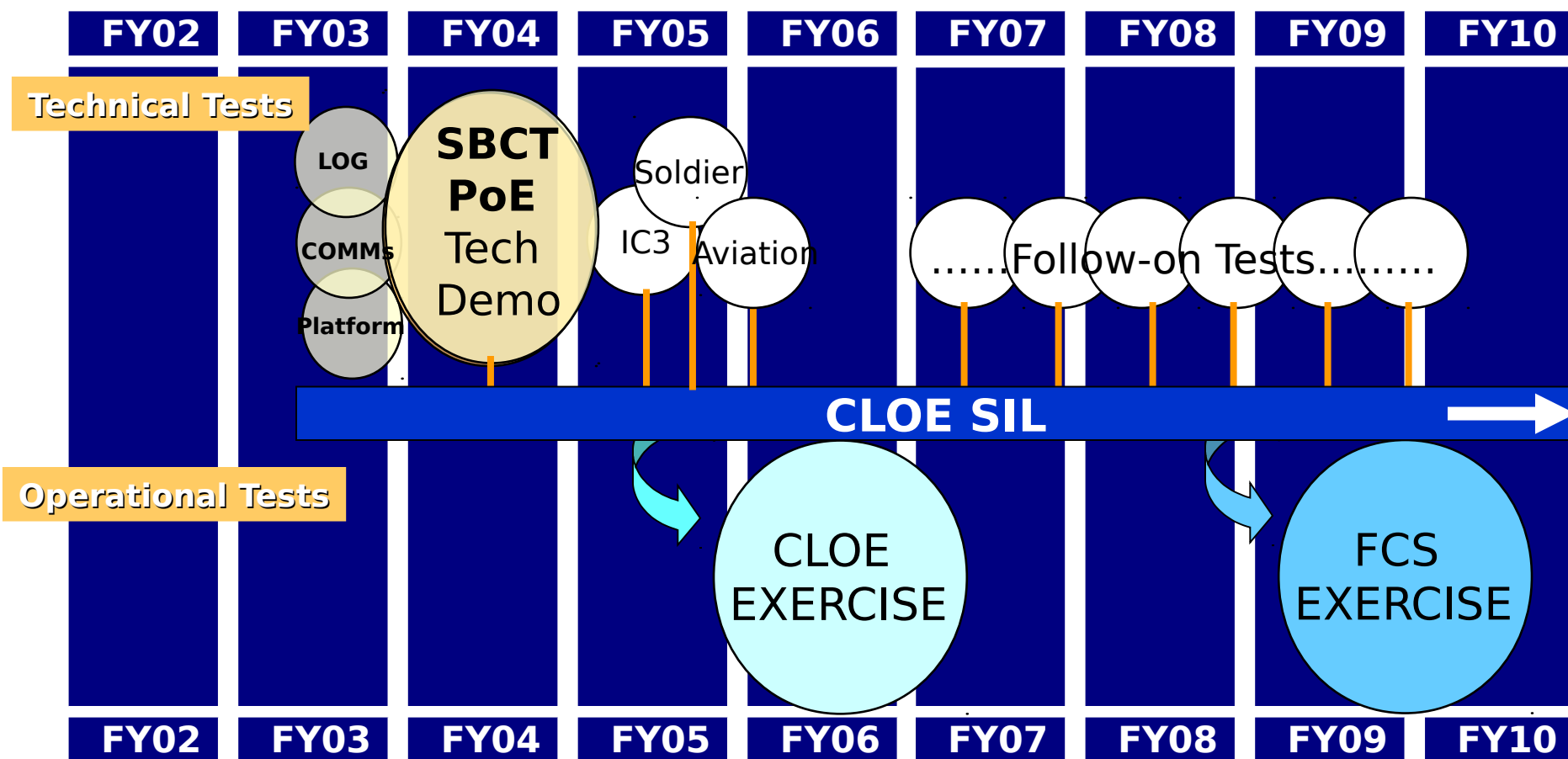
CLOE:

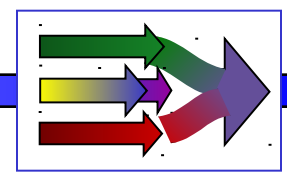
- G-4/LTA membership in SASG
- Business Team Lead for CBM
- Business Area Lead for Field Maintenance

Sustaining The Transforming Army



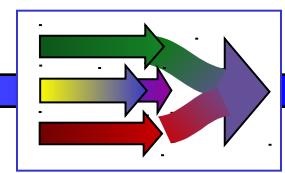
CLOE Major Milestone Schedule





LOG Transformation Technical Risk

- **Reduce Technical *Risk* For Implementing Log Transformation Enablers**
 - **Establish & Operate A CLOE Systems Integration Laboratory (SIL)**
 - Evaluate Concepts
 - Verify & Validate Interfaces & Interoperability
 - Test Before Acquire/Field
 - Key Configuration Management Tool
 - Supports Simulation-based Acquisition
 - Standards-based Technology Insertion
 - **Mobile SIL for Demonstrations**

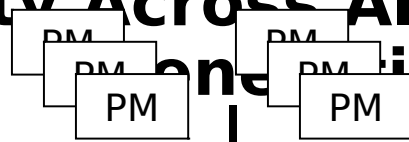


CLOE Systems Integration Lab

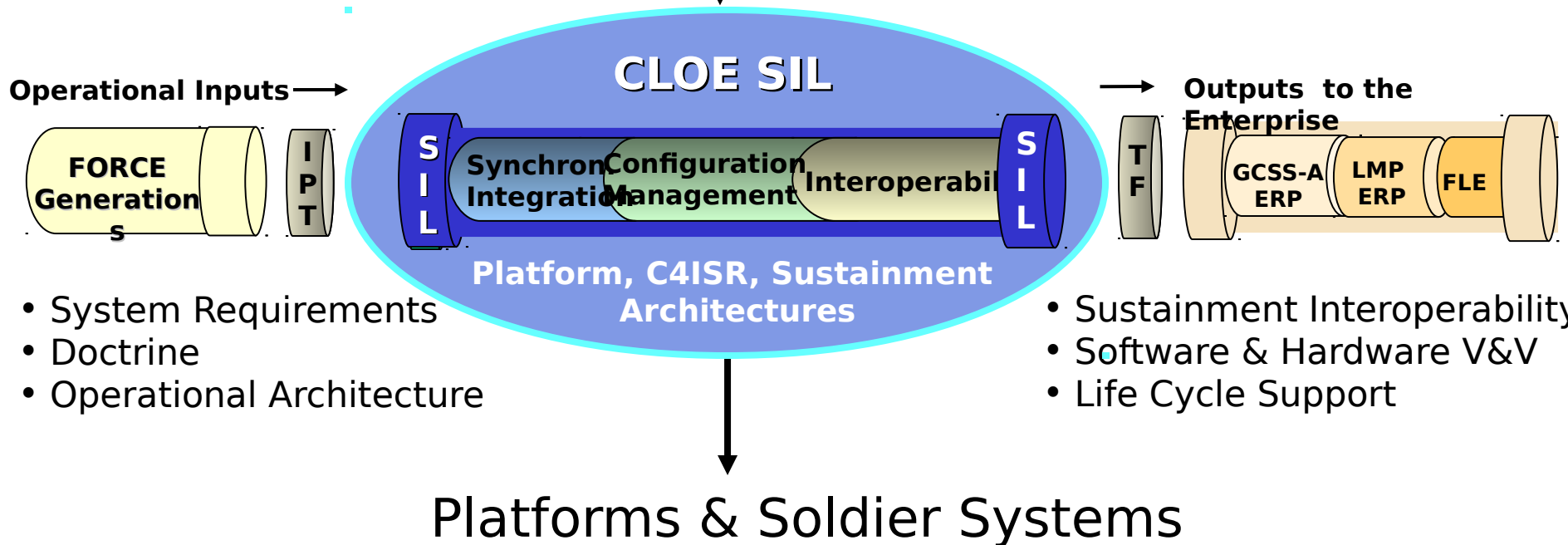
The CLOE SIL Operates as a Meta-Laboratory,
Ensuring

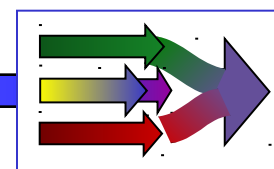
Interoperability Across All Equipment Force

Synchronization
Inputs

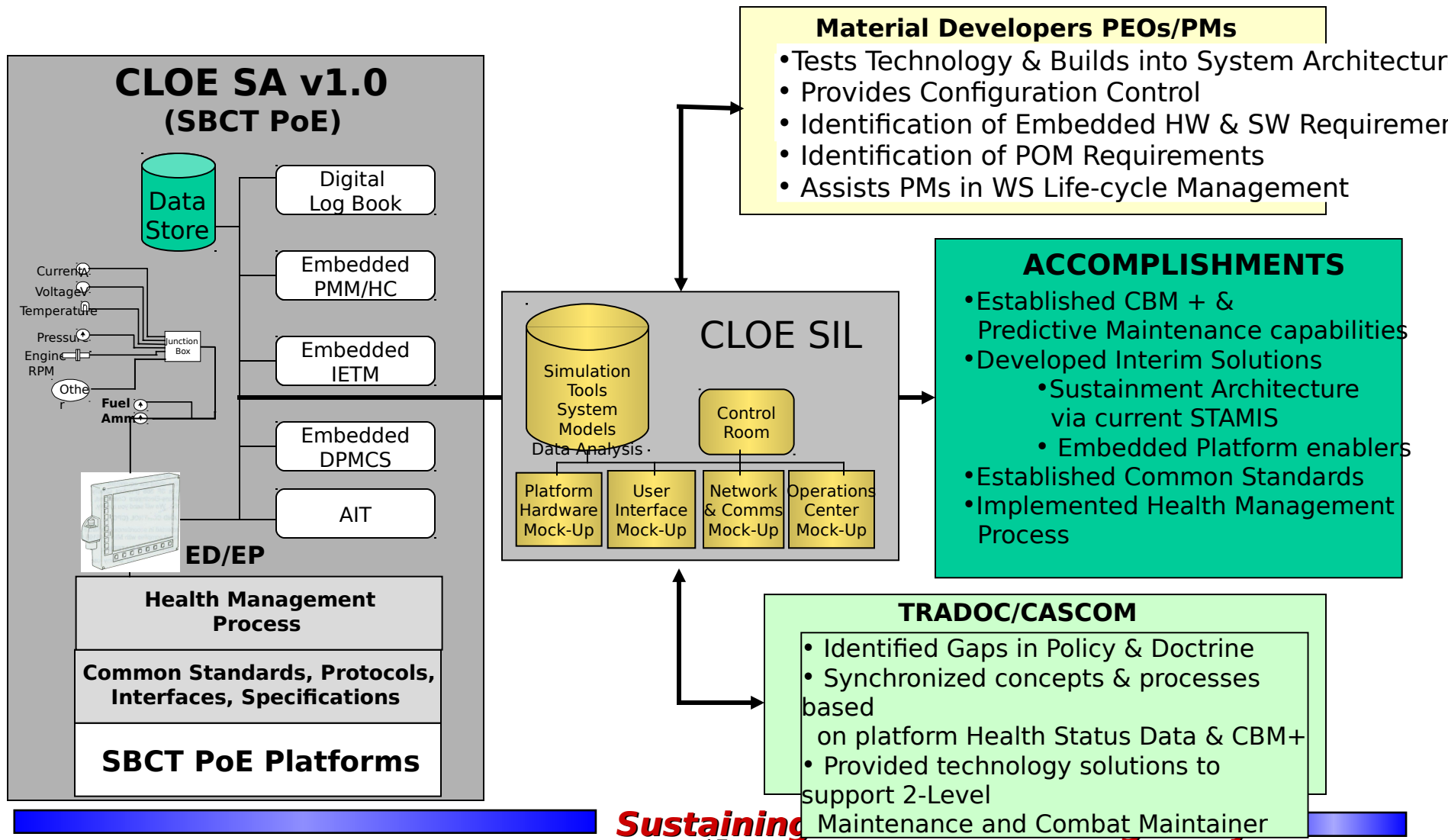


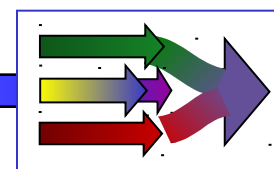
Life-cycle
Verification & Validation



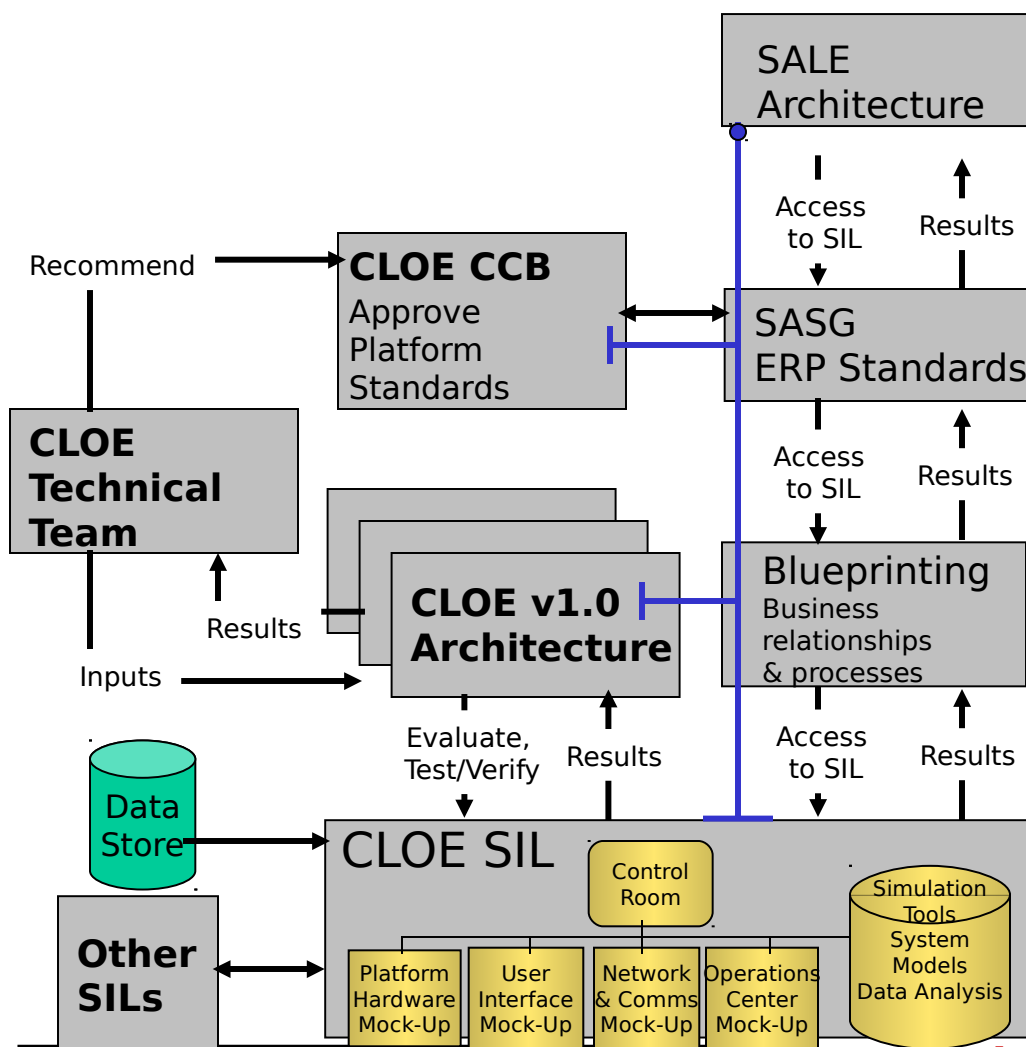


CLOE SIL Business Case - Platform



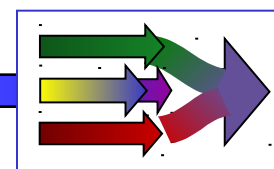


CLOE SIL Business Case - Enterprise Integration



Work Together:
Establish Management
& Technical Working
Relationship Between LTA
and AMC DALEIO

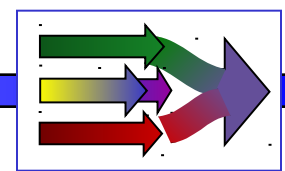
OBJECTIVE:
Determine Business
Relationships and Processes
Required for Blueprinting
Based on Newly Available
Platform Data



CLOE SIL Opportunity

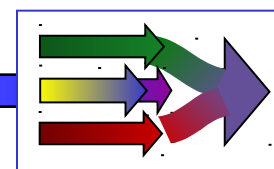
Ft. Indiantown Gap

- Slated to Have Stryker Brigade – Training Started - IOC 2008
- Lab Environment As Well As Real Platforms for Testing
- Integrates Guard and Reserves Into the Transformation Process
- Platforms and Facilities, e.g. Firing Ranges With Support Structures
- Extensive Training and Development Environment
- Combat Fixed Tactical Internet and ULLS/SAMS
- Home To Eastern Army Aviation Training Site
- They Are Ready and Willing to Support



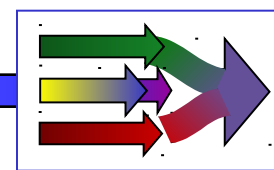
Benefits of Establishing a CLOE SIL

- Provide Roles & Responsibilities for Platform Management of Logistics Transformation Activities
- Establish One location for Army Logistics Transformation Synchronization and Integration Efforts
- Reduce Logistics Transformation Risk
 - Configuration Management Control linked to the CCB Process
 - Verify & Validate Technical Interoperability
- Prioritized CLOE SIL activities provides insight for POM Strategy
- Test Before Acquire/Field



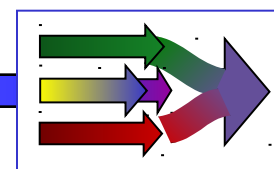
CLOE Funding

- **Currently USALTA + MDEP VALT**
- **Program projected to grow**
 - **Systems Integration Laboratory (SIL)**
 - **Additional related programs**
 - **Aviation**
 - **Watercraft**
 - **Engineering**
 - **Ordnance**
 - **Multi-year guide for Objective Force development**
 - **Complements other programs (FCS, etc.)**



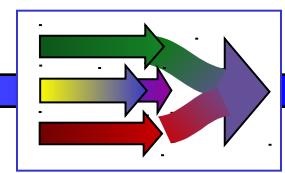
CLOE Funding Cont'd

- **Need separate MDEP**
- **Track program growth, interrelationships**
- **Prioritize CLOE**

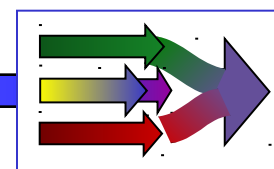


Recommendations

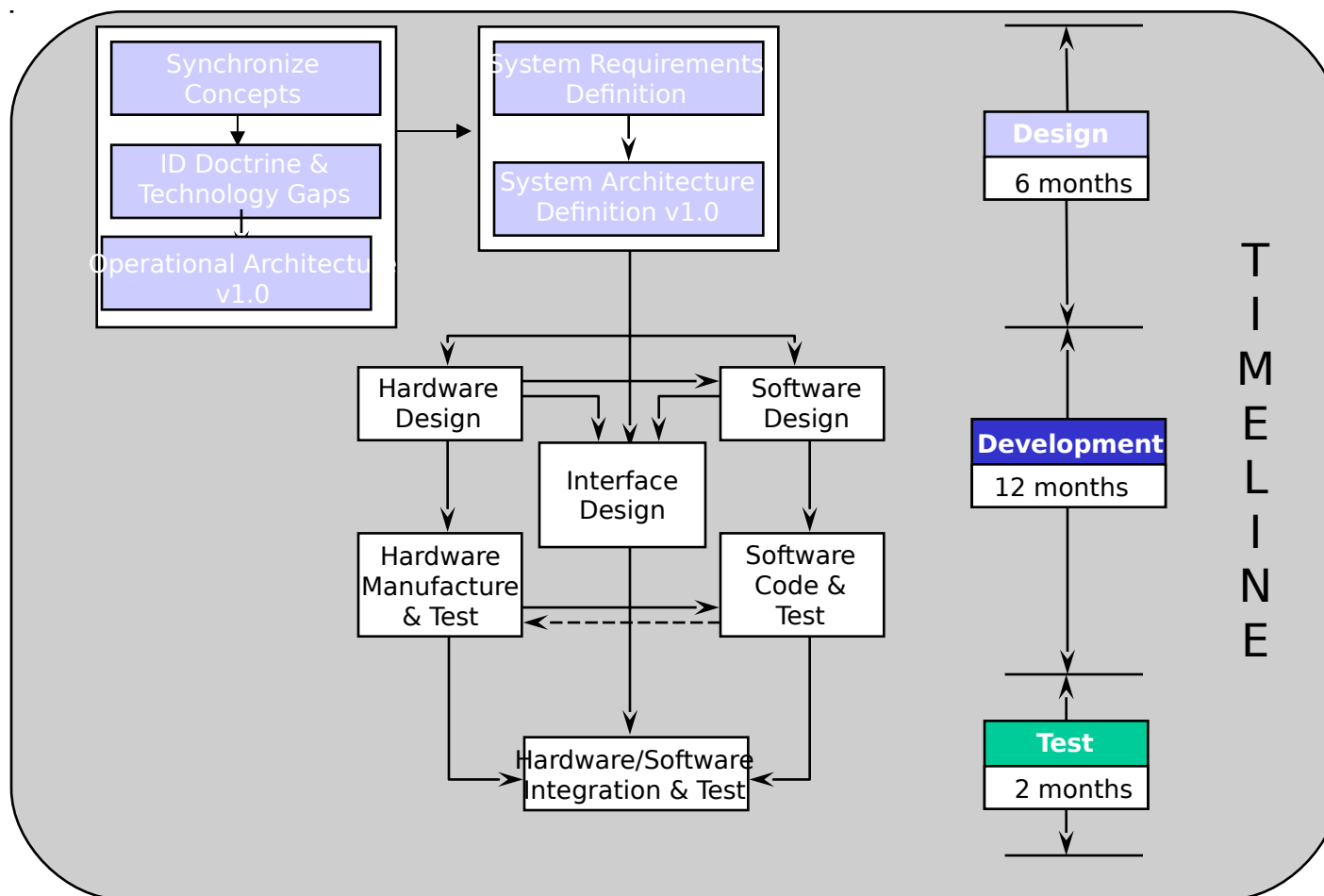
- Approve the Establishment of a CLOE SIL
- Approve a CLOE MDEP
- Approve reporting through the ESC and the LBOD

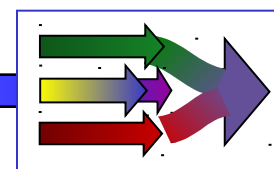


BACKUP



CLOE Architecture v1.0 SIL Prototyping Process Flow

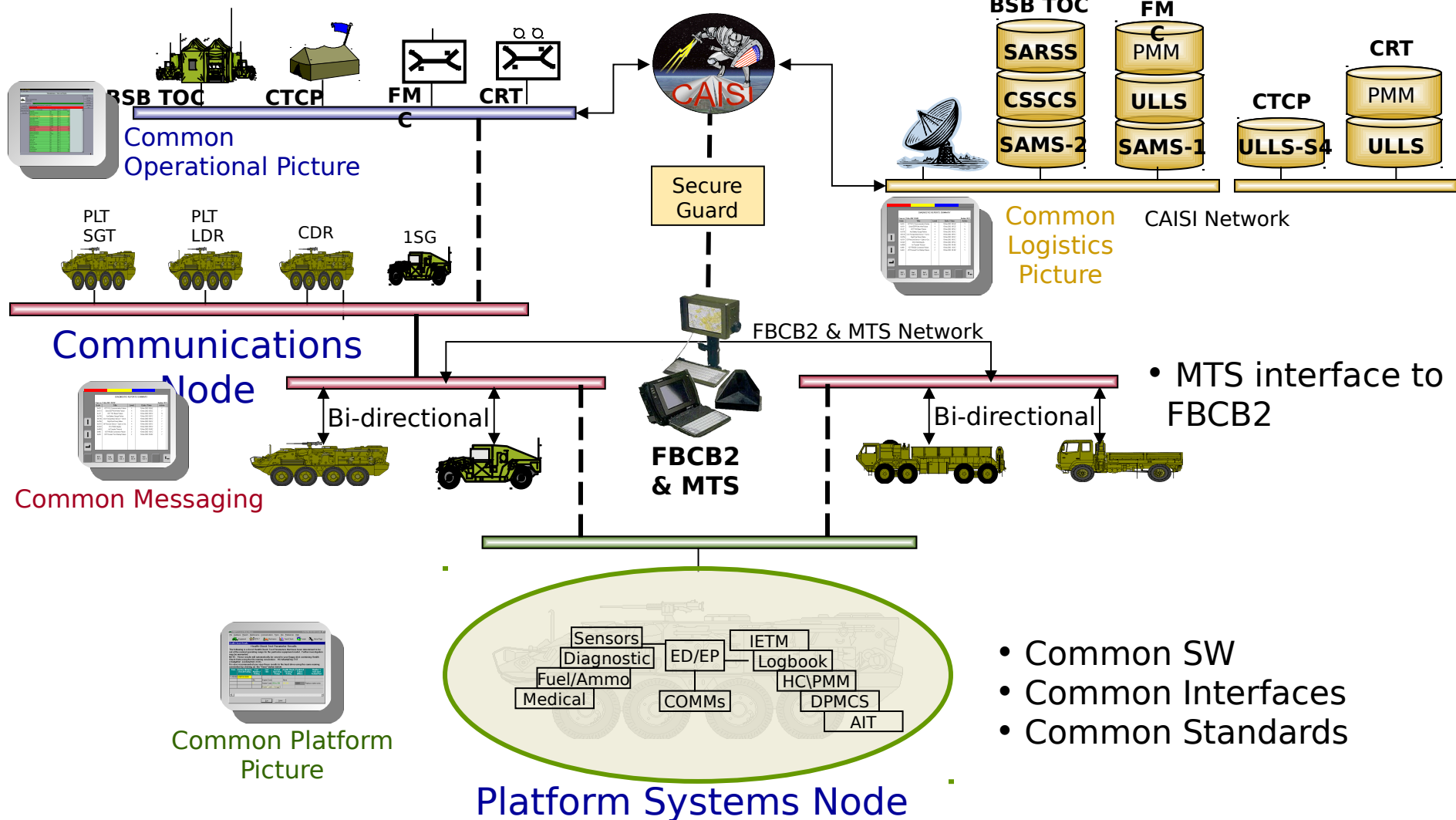




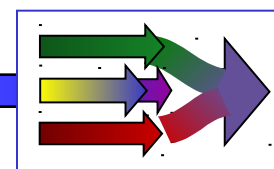
SBCT PoE Demo - Version 1.0 CLOE Architecture

Information Node

Sustainment Node

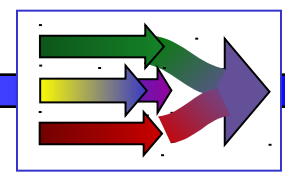


Sustaining The Transforming Army

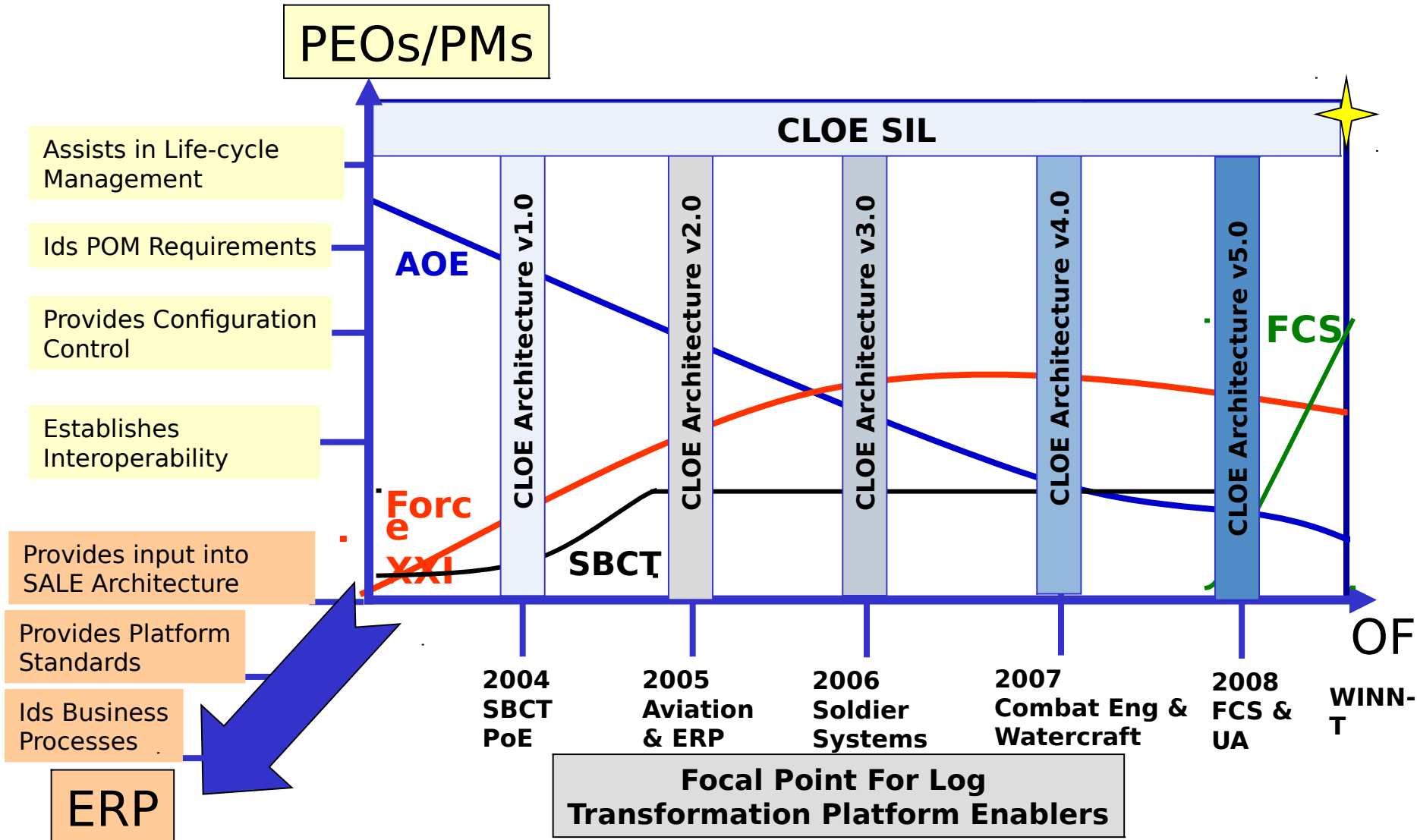


Risk Assessment

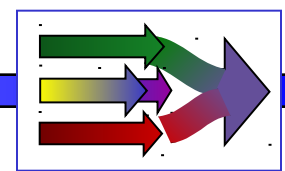
- *SBCT POE Outcome*
 - **SBCT PoE Campaign Plan Has Been Very Successful**
 - **Established the Importance of the SBCT PoE**
 - **Led to the “Piling on Effect”, Increased Scope**
 - **Increased the Risk of the SBCT PoE Technical Test & Demo (Cost & Schedule)**
 - **No Active Duty Green Suiters Support Available for Technical Test & Demo**
- *Result Has Led Us to Reconsider Our Direction Forward*



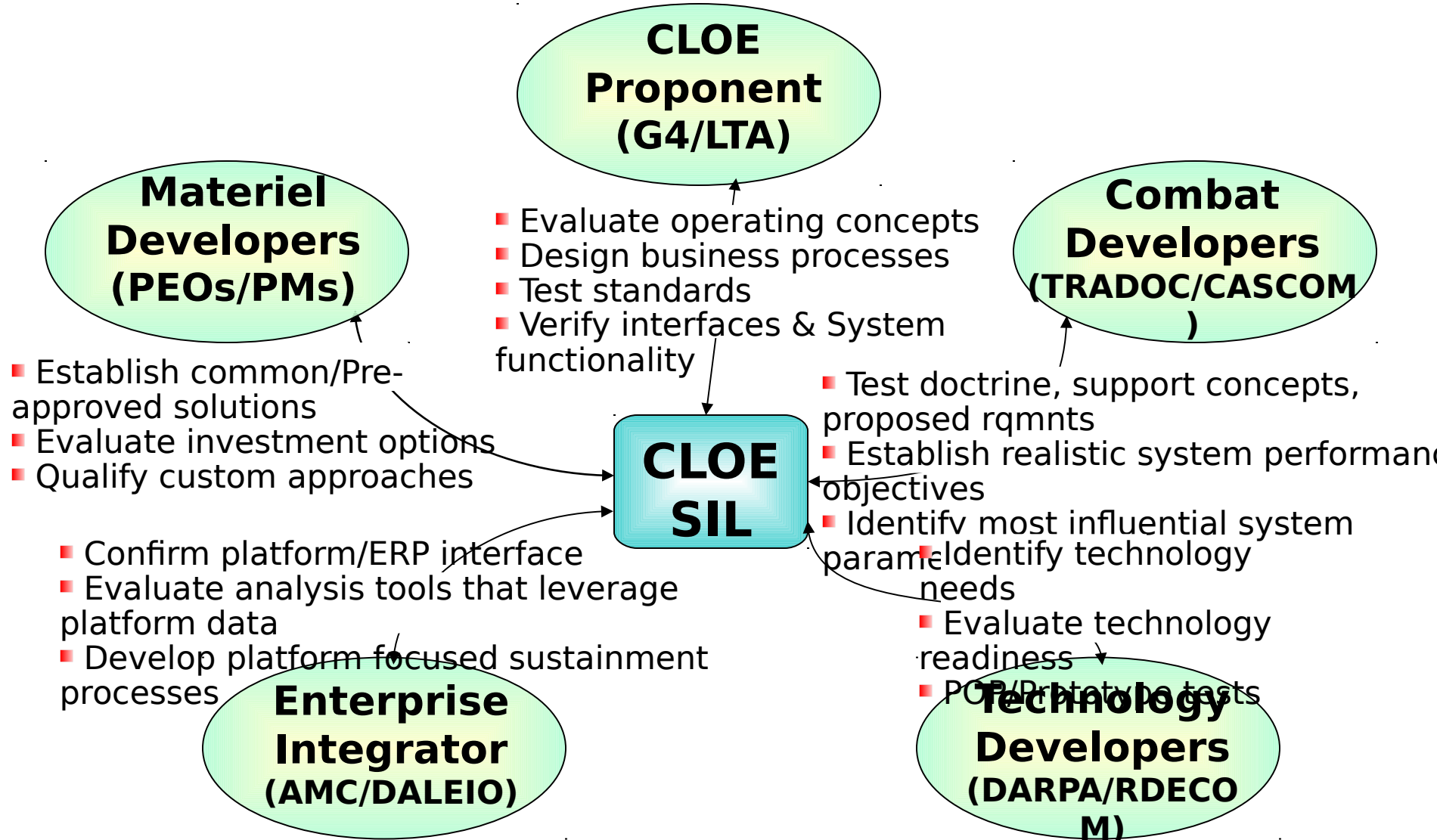
Why We Need a Logistics SIL

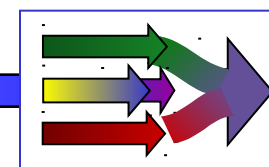


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CLOE SIL Supports All Phases of Log Transformation

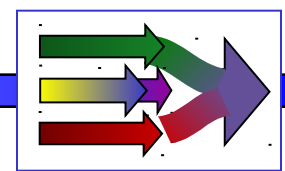




CLOE POM Strategy

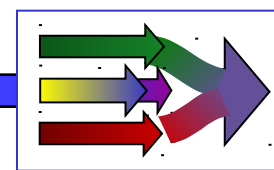
CLOE Funding Requirements (\$ 000s)

Function	Activity	Feature		FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Technical Team												
	LTA Staff		Sustainment									
	Architecture and Management		Sustainment									
	Engineering		Sustainment									
	Modeling, Business Case, Documentation		Sustainment									
	Subtotal											
FCS Partnership												
	"B Kit" Engineering											
		Hardware	Acquisition									
		Software	Acquisition									
	Complementary Programs Engineering											
		Hardware	Acquisition									
		Software	Acquisition									
	Subtotal											
CLOE Activities												
	SBCT POE Demo(s)											
		Hardware	Acquisition									
		Software	Acquisition									
		Integration	Acquisition									
		Operation	Sustainment									
	CLOE Exercise(s)											
		Hardware	Acquisition									
		Software	Acquisition									
		Integration	Acquisition									
		Operation	Sustainment									
	CLOE SIL											
		Hardware	Acquisition									
		Software	Acquisition									
		Integration	Acquisition									
		Operation	Sustainment									
	Subtotal											
PM Mods	TBD		Acquisition	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
			Sustainment	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

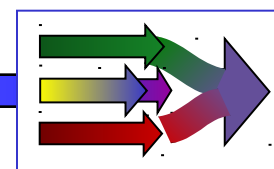


Thoughts to take away

- **CLOE Is A Collaborative, Living Process That Works With All Major Army Agencies, Organizations and Programs to Enable Logistics Transformation**
- **CLOE Is The Only Initiative That Addresses ARMY Sustainment Interoperability Among Current, Stryker And Objective Forces With Respect to Condition-Based Maintenance and Anticipatory Logistics**
- **The Synchronization of Sustainment Doctrine & Technology is an Outcome of the CLOE Process**
- **The Path For Platform Technology Insertion Goes Through the CLOE SIL**



BACKUP



CLOE Purpose

The Purpose Of CLOE Is To Ensure Sustainment Interoperability Among Self Reporting, Self-Diagnosing Platforms And The Objective Force Sustainment System Network To Provide The Highest Possible State Of

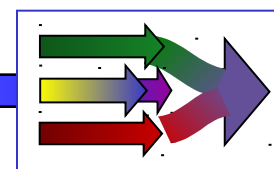
Operational Availability

Mission Capability

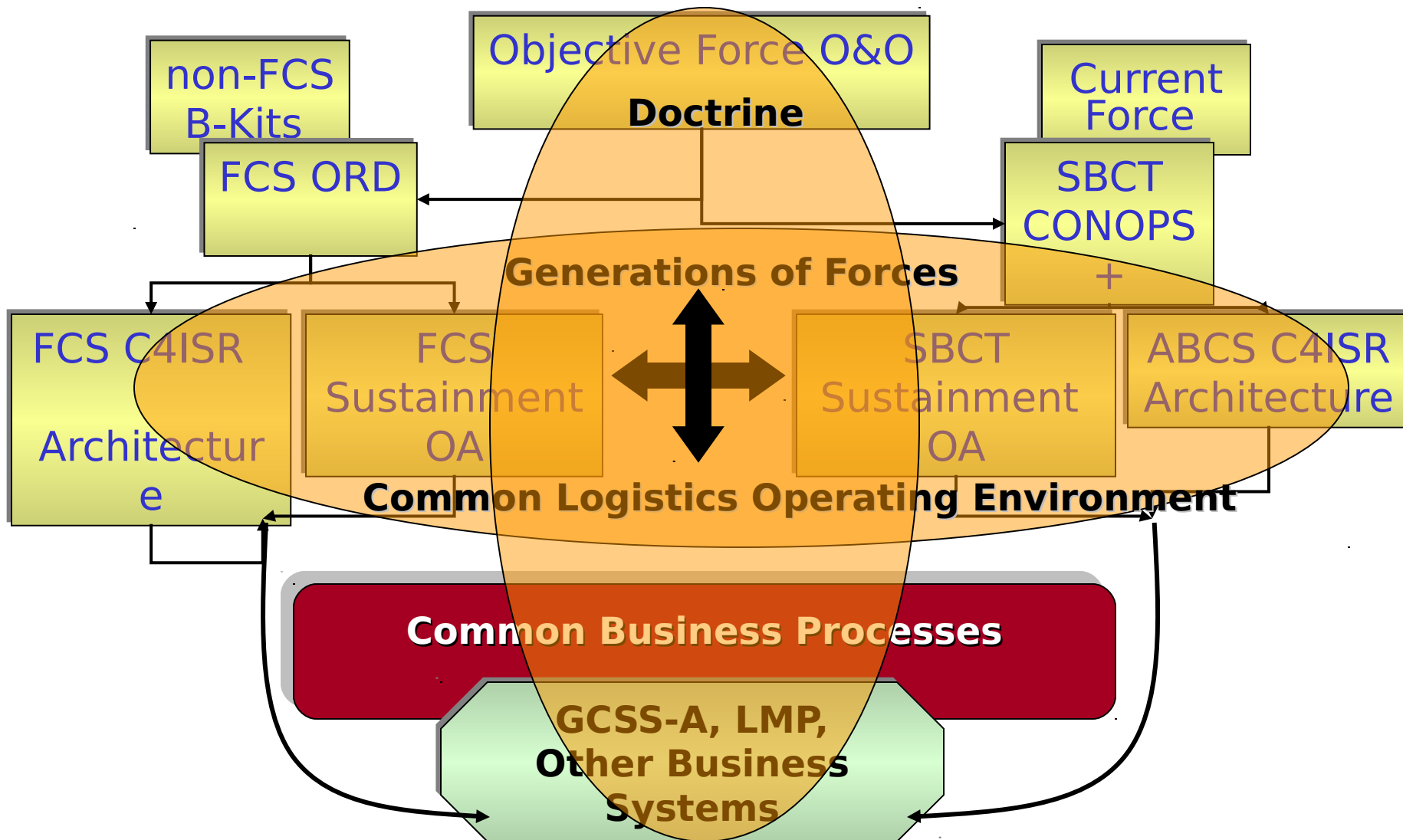
Combat Power

While Reducing The Logistics Footprint

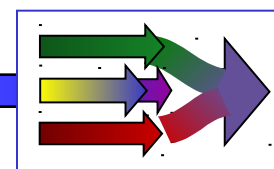
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CLOE SCOPE



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CLOE Applies Common Standards

Platform

GROUND

SAE - Vehicle Communications Data Bus Standards /
IEEE Ethernet

API - SAE Recommended Protocols

AIR

Mil-Std-1553 Avionics Data Bus

IEEE Ethernet / Fiber Optic Standards

Middleware

XML, SOAP, Web Services, J2EE

Communications

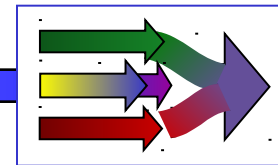
Sipernet, Nipernet, NSA Security Protocols;
IEEE 802.11 Wireless

ERP

Mil-Std-3008, SAP OCI; MySAP Web Portals, MIMOSA

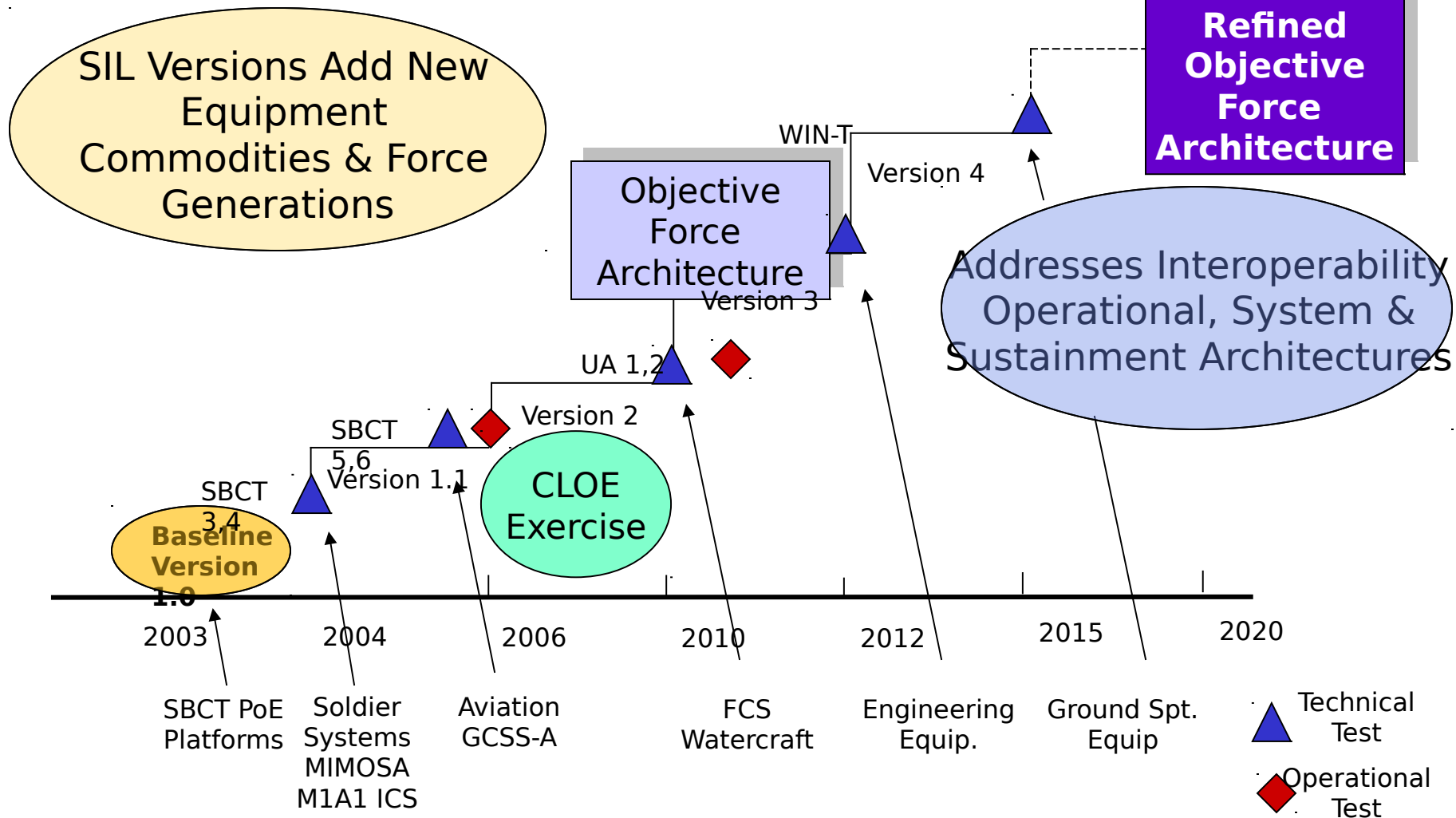
Architecture

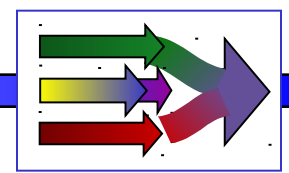
DII-COE Compliance; Joint Technical Architecture - Army Compliance



CLOE SIL

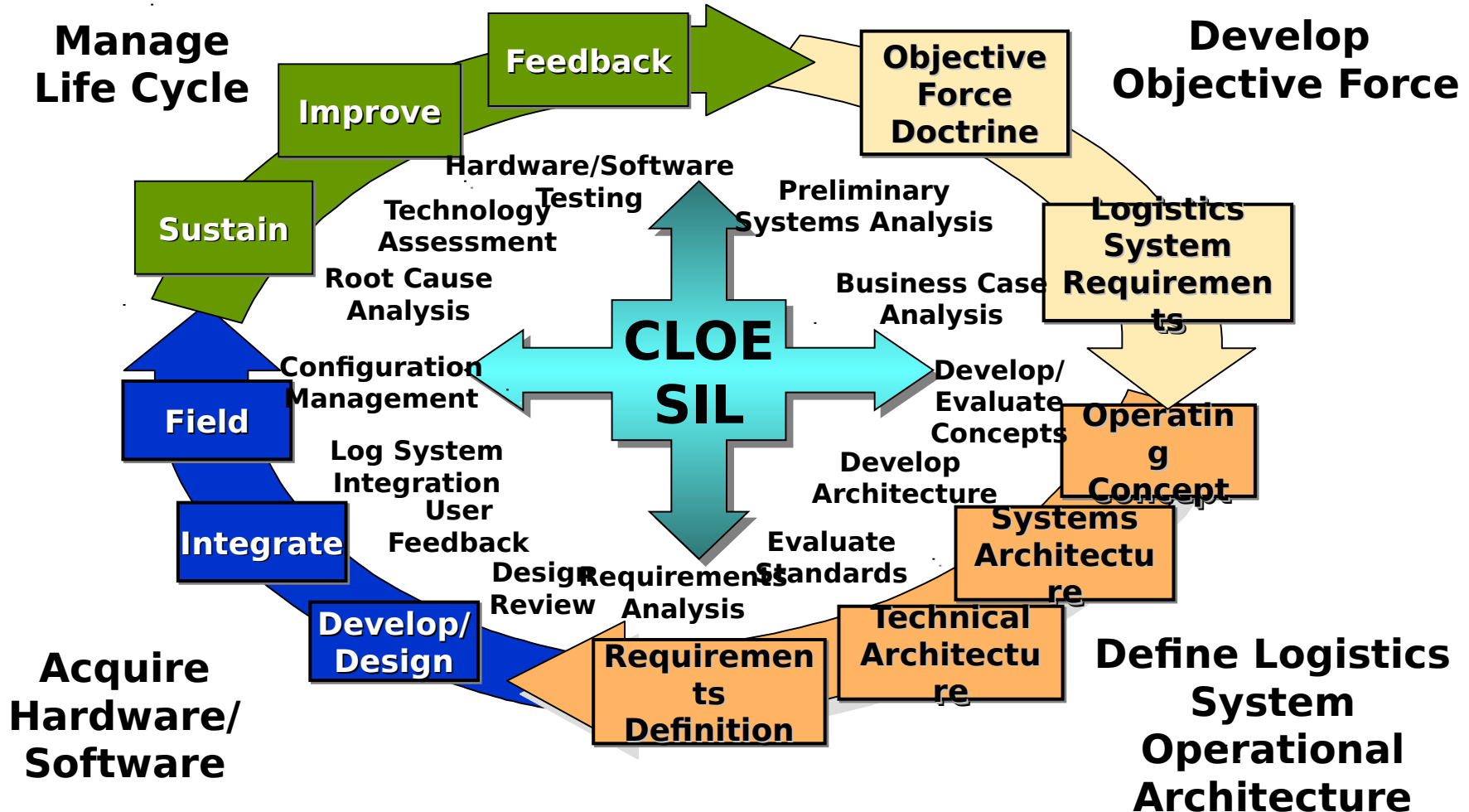
Continuous Improvement Cycle



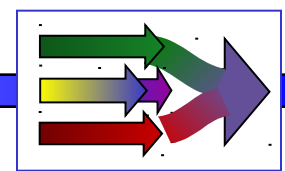


The CLOE Systems Integration Laboratory (SIL)

Support Total Life Cycle of Objective Force Sustainment

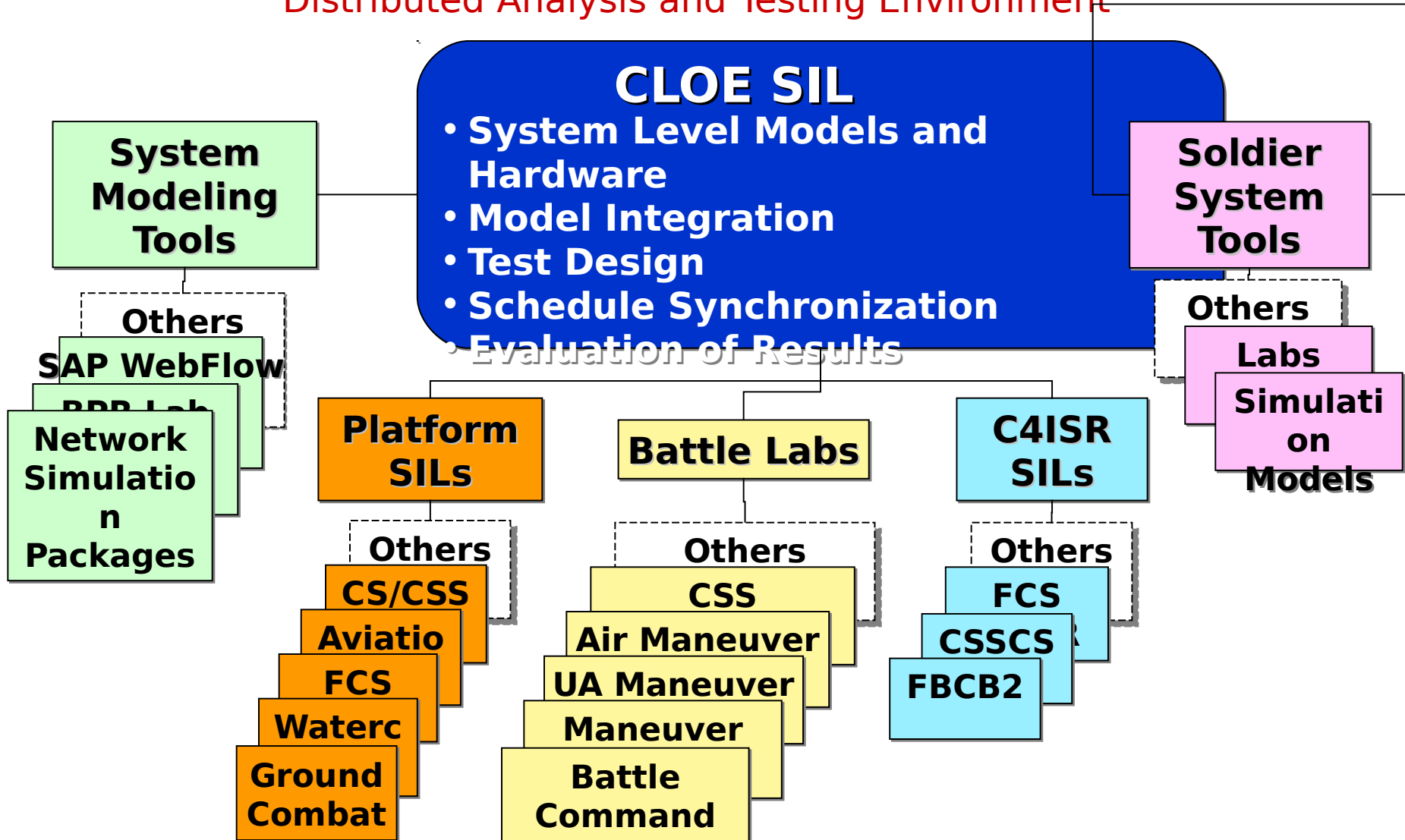


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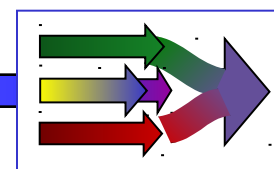


CLOE SIL Concept

Distributed Analysis and Testing Environment



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CLOE Funding Comparison

- **MDEP VALT (POM 05-10)**
 - **Platform standards**
 - **ERP interfaces**
 - **On-board integration**
 - **Proof of enablers**
 - **Experiment (initial planning)**
 - **Outyear prognostics development**
- **New MDEP adds**
 - **SIL**
 - **Related programs**
 - **OF architecture development**
- **Related programs**
 - **FCS “B Kits”**
 - **FCS Complementary Programs**
 - **System/subsystem EV&V**